A COMPARATIVE STUDY OF DENTAL ARCH MORPHOLOGY AND TOOTH OCCLUSION

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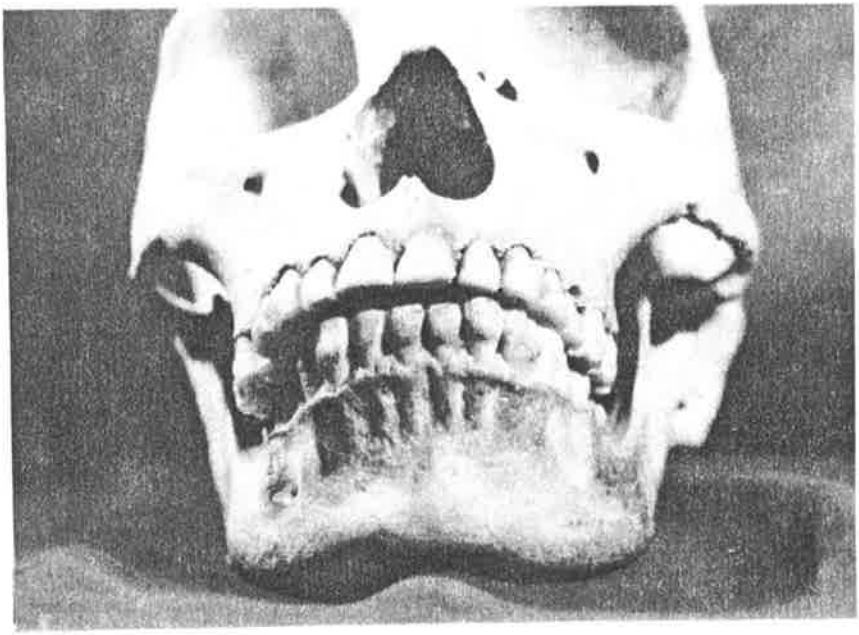

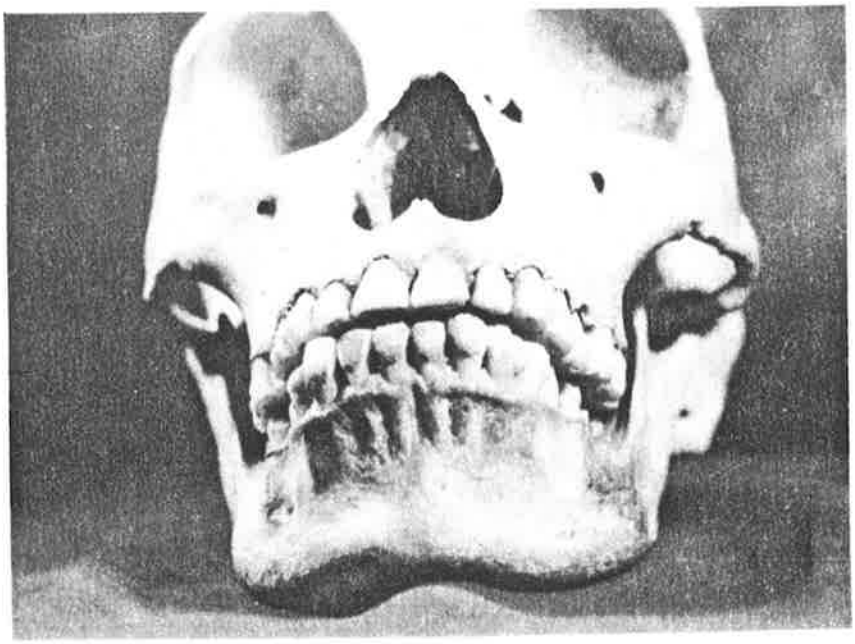

Alternate Intercuspation.

SUMMARY

According to generally accepted concepts of tooth occlusion, the upper and lower teeth meet in maximum intercuspation when the jaw is closed into a position that is variously termed tooth position, intercuspal position or centric occlusion. However, it has been reported that some ethnic groups, particularly pre-contemporary, display disparities in the breadths of upper and lower dental arches that prevent the teeth from occluding bilaterally in the well-known cusp to fossa and cusp to ridge relationships. This character, which is termed alternate intercuspation in this study, has not previously been quantified although it has been described in general terms by several previous authors.

The main objective of the investigation was to determine whether a statistically significant difference exists between homologous maxillary and mandibular dental arch breadths within and between Caucasoid and Aboriginal groups, and hence, whether alternate intercuspation is a measurable character.

The results indicate that arch breadths display significant inter-racial variability and sexual dimorphism within each racial group. The differences between homologous upper and lower dental arch breadths were most marked in the premolar regions of the Aboriginal male sample, and it is suggested that alternate intercuspation is a particular feature of the dental occlusion of this group.

This preliminary investigation has established that alternate intercuspation is a measurable character. However, the selection of different descriptive parameters may facilitate the characterization of this condition. Future studies based on analysis of arch shape are planned, and investigations will include comparison of arch shape between related individuals, shape changes with age, and taxonometric comparisons of dental arch shapes.

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The material used for this research investigation was obtained by the late Murray J. Barrett, University of Adelaide and acknowledgement is made of the meticulous care with which the study material was assembled.

SIGNED STATEMENT

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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